

and 2(C), for example, illustrate a resin (transparent material) 115, 135 and black stripes 121, 141 (see also page 14, line 10+; page 15, line 24+). Although the Applicants have not necessarily provided an exact delineation of a cured portion and an uncured portion of the transparent material in the Figures, such subject matter does not readily admit of illustration by a drawing. Reconsideration and withdrawal of the objections are requested.

The Official Action acknowledges that previous rejections based on JP 04-241220 "are withdrawn in view of the filing of the English translation of the foreign priority paper" (page 3, Paper No. 20051030). However, the Official Action continues to assert that the recited features 'a transparent material having a cured portion and an uncured portion, wherein said cured portion surrounds said liquid crystal, wherein said uncured portion is disposed under said black coating' are inherently associated with polymer dispersed liquid crystal devices having a black coating formed on one of the substrates" (Id.). Despite the fact JP '220 and Yoshida are not available as prior art in the present application, the Official Action nonetheless attempts to cite JP '220 and Yoshida in support of the above assertion. Since JP '220 and Yoshida are not available as prior art in the present application, they cannot be relied upon to demonstrate evidence of the state of the art at the time of the present invention, and may not be relied upon to support the assertion of inherency or as support for the alleged double patenting and obviousness rejections in the Official Action. Therefore, the assertion of inherency should be withdrawn.

The Official Action rejects claims 1-29 under the doctrine of obviousness-type double patenting over the combination of claims 1-24 of U.S. Patent No. 6,618,105 to Yamazaki et al. and U.S. Patent No. 5,193,071 to Iwai et al. The Applicants respectfully submit that the independent claims of the subject application are patentably distinct from the combination of the claims of the Yamazaki '071 patent and Iwai.

As stated in MPEP § 804, under the heading "Obviousness-Type," in order to form an obviousness-type double patenting rejection, a claim in the present application

must define an invention that is merely an obvious variation of an invention claimed in the prior art patent, and the claimed subject matter must not be patentably distinct from the subject matter claimed in a commonly owned patent. Also, the patent principally underlying the double patenting rejection is not considered prior art.

The Applicants respectfully traverse the obviousness-type double patenting rejection. The independent claims of the present application recite "a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion, ... a black coating formed between said layer and said second substrate; ... wherein said cured portion surrounds said liquid crystal, wherein said uncured portion is disposed under said black coating," and it is respectfully submitted that the claims of the present application are not a timewise extension of the invention as claimed in the Yamazaki '105 patent, either alone or in combination with Iwai.

The Official Action concedes that the claims of Yamazaki '105 do not teach "black stripes comprising the black coating are formed between the layer and the second substrate" (page 4, Paper No. 20051030). Furthermore, the Official Action implicitly concedes that the claims of Yamazaki '105 do not teach or suggest a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion; where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. The Official Action asserts that it would have been obvious to incorporate the black stripes 18 of Iwai into the device of the claims of Yamazaki '105 (Id.). Also, the Official Action asserts that "[it] is inherent with polymer dispersed liquid crystal devices having black matrix or black stripes that the cured portion surrounds said liquid crystal and the uncured portion is disposed under the black coating (black matrix or black stripes)" (Id.). Although not stated explicitly in the Official Action, it appears that JP '220 and Yoshida are relied upon to support this assertion of inherency (page 3, Id.). However, as noted above, JP '220 and Yoshida are not available as prior art.

The Applicants respectfully traverse the finding of inherency, because the Official Action has not provided a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the claims of Yamazaki '105 and Iwai. Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Furthermore, MPEP § 2112 makes clear the following:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original)

Although Iwai appears to disclose black stripes 18 between liquid crystal 4 and substrate 17, Iwai does not teach or suggest forming cured and uncured portions of a transparent material, much less forming an uncured portion of a transparent material under a black coating.

Also, in the present application, an uncured portion is formed under a black stripe, for example, by emitting UV light using the black stripe as a mask. Even if there is a black matrix or a black stripe, such as black stripes 18 of Iwai, an uncured portion is not necessarily formed under the black stripes 18.

Therefore, the claims of Yamazaki '105 and Iwai do not teach or suggest a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion, and a black coating formed between the layer and a second substrate;

where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. Also, these features do not necessarily flow from the teachings of the claims of Yamazaki '105 and Iwai. Reconsideration and withdrawal of the obviousness-type double patenting rejections are requested.

The Official Action rejects claims 1-9, 25 and 26 as obvious based on the combination of U.S. Patent No. 5,543,945 to Kimura et al. and JP 62-178905. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. As noted above, the independent claims recite a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion, and a black coating formed between the layer and a second

substrate; where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. For the reasons provided below, Kimura and JP '905, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

The Official Action concedes that Kimura does not teach "black stripes comprising the black coating being formed between the liquid crystal layer and the second substrate" (page 5, Paper No. 20051030). Furthermore, the Official Action implicitly concedes that Kimura does not teach or suggest a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion; where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. The Official Action asserts that it would have been obvious to incorporate the black stripes 3 of JP '905 into the device of Kimura (Id.). Also, the Official Action again asserts that "[it] is inherent with polymer dispersed liquid crystal devices having black matrix or black stripes that the cured portion surrounds said liquid crystal and the uncured portion is disposed under the black coating (black matrix or black stripes)" (Id.).

Please incorporate the arguments above with respect to the traversal of the Examiner's alleged inherency argument based on JP '220 and Yoshida (not prior art). The Applicants respectfully traverse the finding of inherency, because the Official Action has not provided a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of Kimura and JP '905.

Although Kimura teaches hardening with a UV ray or heat, casting or impregnation (column 6, lines 63-65), Kimura does not teach or suggest forming an uncured portion. Furthermore, Kimura appears to teach curing a liquid crystal dispersion by heating (column 7, lines 33-35). That is, Kimura teaches away from the present invention in that it teaches curing by heating, which would not result in the formation of cured and uncured portions of a transparent material. Also, Kimura does

not teach or suggest forming an uncured portion of a transparent material under a black coating.

JP '905 does not cure the deficiencies in Kimura. Although JP '905 appears to disclose black stripes 3 over a substrate 1, JP '905 does not teach or suggest forming cured and uncured portions of a transparent material, much less forming an uncured portion of a transparent material under a black coating.

Therefore, Kimura and JP '905 do not teach or suggest a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion, and a black coating formed between the layer and a second substrate; where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. Also, these features do not necessarily flow from the teachings of Kimura and JP '905.

Since Kimura and JP '905 do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

The Official Action rejects claims 10-15 and 27 as obvious based on the combination of U.S. Patent No. 5,003,356 to Wakai et al., U.S. Patent No. 5,305,126 to Kobayashi et al. and Iwai. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

The Official Action concedes that the claims of Yamazaki '105 do not teach "a liquid crystal (LC) being dispersed in a transparent resin (polymer dispersed liquid crystal, PDLC), and black stripes comprising the black coating are formed between the liquid crystal layer and the second substrate" (page 6, Paper No. 20051030). Furthermore, the Official Action implicitly concedes that Wakai does not teach or suggest a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion; where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. The Official Action

asserts that it would have been obvious to incorporate the black stripes 18 of Iwai into the device of Wakai (pages 6-7, Id.). Also, the Official Action again asserts that “[it] is inherent with polymer dispersed liquid crystal devices having black matrix or black stripes that the cured portion surrounds said liquid crystal and the uncured portion is disposed under the black coating (black matrix or black stripes)” (page 6, Id.).

Please incorporate the arguments above with respect to the traversal of the Examiner’s alleged inherency argument based on JP ‘220 and Yoshida (not prior art). The Applicants respectfully traverse the finding of inherency, because the Official Action has not provided a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of Wakai, Kobayashi and Iwai.

Wakai, Kobayashi and Iwai do not teach or suggest a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion, and a black coating formed between the layer and a second substrate; where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. Also, these features do not necessarily flow from the teachings of Wakai, Kobayashi and Iwai.

Further, as noted above, in the present application, an uncured portion is formed under a black stripe, for example, by emitting UV light using the black stripe as a mask. Even if there is a black matrix or a black stripe, such as black stripes 18 of Iwai, an uncured portion is not necessarily formed under the black stripes 18.

Since Wakai, Kobayashi and Iwai do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

The Official Action rejects claims 16-24, 28 and 29 as obvious based on the combination of Kimura, page 7, lines 12-21 of the present specification, which the Official Action refers to as “Applicant’s Prior Art Admission (APAA)” and JP ‘905.

Please incorporate the arguments above with respect to the deficiencies in Kimura and JP '905. APAA does not cure the deficiencies in Kimura and JP '905. The Official Action relies on APAA to allegedly teach "a PDLC device using a ferroelectric LC material" (page 7, Paper No. 20051030). However, Kimura and JP '905 and APAA, either alone or in combination, do not teach or suggest a layer comprising a liquid crystal and a transparent material having a cured portion and an uncured portion, and a black coating formed between the layer and a second substrate; where the cured portion surrounds the liquid crystal, and where the uncured portion is disposed under the black coating. Since Kimura and JP '905 and APAA do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify (1) the claims of Yamazaki '105 and Iwai; (2) Kimura, JP '905 and AAPA; or (3) Wakai, Kobayashi and Iwai or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The test for obviousness is not whether the references "could have been" combined or modified as asserted in the Official Action, but rather whether the references should have been. As noted in MPEP § 2143.01, "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." In re

Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (emphasis in original). Thus, it is respectfully submitted that the standard set forth in the Official Action is improper to support a finding of *prima facie* obviousness.

As noted in detail above, the Official Action concedes that the claims of Yamazaki '105, Kimura, and Wakai do not teach a black coating where a cured portion surrounds a liquid crystal, and where an uncured portion is disposed under the black coating. The Official Action relies on Iwai or JP '905 to allegedly teach incorporating black stripes into the device of the claims of Yamazaki '105, Kimura, or Wakai and on inherency to allegedly teach that it would have been obvious to then somehow provide the black stripes and a transparent material such that a cured portion surrounds a liquid crystal, and such that an uncured portion is disposed under the black coating. As noted above, the inherency argument appears to be based on references which are not available as prior art, and the Official Action has not indicated that the allegedly inherent features would necessarily flow from the teachings of the prior art references.

The Official Action asserts that "it would have been obvious to a person of ordinary skill in the art in view of [Iwai et al. or JP '905] to employ black stripes comprising the black coating being formed between the liquid crystal layer and the second substrate in the patent claims for protecting the semiconductor layer of the TFT from being exposed to a direct incident light" (pages 4, 5, 7 and 8, Paper No. 20051030). The Applicants respectfully disagree and traverse the above assertions in the Official Action.

For example, there is no showing in any of the references that teaches or suggests that a black coating, where a cured portion surrounds a liquid crystal, and where an uncured portion is disposed under the black coating, are of any concern, or that these concerns could or should be solved by incorporating black stripes into the base references. Specifically, it is unclear how or why any a concern regarding exposure of "direct incident light" on a TFT is relevant to cured and uncured portions of a transparent material or to disposing an uncured portion under a black coating.

Further, the Official Action has not shown why one of ordinary skill in the art at the time of the present invention should have picked a method for curing the transparent material that is capable of producing cured and uncured portions of a transparent material. For example, heating would not result in cured and uncured portions of a transparent material. The Official Action has not shown why one would have preferred the use of a method, such as UV curing, or recognized that UV curing should be used to create cured and uncured portions of a transparent material.

Also, it is not clear why one of ordinary skill in the art who was concerned with "protecting the semiconductor layer of the TFT from being exposed to a direct incident light" would not have simply practiced Iwai or JP '905 alone.

Further, it is not sufficient to merely point out the advantages of multiple references and assert that it would have been obvious to combine the two references so that you can have both advantages in one device. Rather, in order to form a *prima facie* case of obviousness, the Official Action must show why the references should have been combined.


Therefore, the Applicant respectfully submits that the Official Action has not provided a proper suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify (1) the claims of Yamazaki '105 and Iwai; (2) Kimura, JP '905 and AAPA; or (3) Wakai, Kobayashi and Iwai or to combine reference teachings to achieve the claimed invention.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Eric J. Robinson
Reg. No. 38,285

Robinson Intellectual Property Law Office, P.C.
PMB 955
21010 Southbank Street
Potomac Falls, Virginia 20165
(571) 434-6789